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# MSX-1

## Professional DJ Mixer

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**CITRONIC**

Thank you for choosing Citronic and the MSX-1 Mix Station mixer. You have joined a discerning group of DJ's and operators who value design integrity, quality and state of the art facilities.

Established in Melksham, Wiltshire in 1972, Citronic occupies prestigious purpose built factory headquarters. The award winning product range covers professional audio mixers, amplifiers and signal processing.

Each unit is manufactured to the highest possible standards and all have an enviable reputation for reliability and value for money - the noted hallmark of Citronic products.

Substantial investment has been made in high technology CAD systems, manufacturing control and testing techniques. This sophisticated computerisation coupled with an extensive research and development program, enables the company to offer an exceptional degree of manufacturing excellence and quality assurance.

Citronic has always listened carefully to the customer and places tremendous emphasis on market research. This ensures that the exacting requirements of the DJ are complemented without compromise, throughout the entire product range. This unique approach, coupled with a strong input from a highly qualified engineering team, ensures that Citronic maintains its position as a respected leader, in the industry's development.

Many of Citronic's unique design features have now become standard features in the market place. Features such as the 'punch' button and 'headphone mix', with the MSX-1's new feature 'Syncro Beat' set to continue the trend of Citronic leading the way.

Citronic has a distribution network throughout Europe, Asia and the Americas.

**WARNING**

In order to obtain the best service from the unit we STRONGLY recommend that you read this manual before you apply any power.

**7: Your Guarantee of Satisfaction**

This product is guaranteed to the original purchaser against defects in material and workmanship for one year from the date of initial purchase. Activate this guarantee at the time of purchase by returning the Guarantee Card to the address on the front page. Keep a copy of your sales receipt for proof of guarantee status, should it be necessary.

The crossfader itself is a replaceable part and is only guaranteed against defective workmanship. The slider selected for the crossfader function has been chosen for its excellent mechanical properties. In a discotheque application the extensive use of this facility means that the number of operations in a twelve month period can exceed the manufactures electrical specification.

If a malfunction occurs, the dealer who supplied the unit will be happy to handle the repair. When returning a unit, use the original factory carton - do not chance inadequate packing materials. Simply tape a note to the unit describing the malfunction.

If your unit is out of guarantee, we recommend that you return it to an authorised Citronic dealer for repair or service. Experienced personnel, supported by specialist testing equipment, will be able to find and correct the fault in the most efficient and cost effective way.

**8: CE Marking****EMC Conformity**

The MSX-1 has been tested to demonstrate compliance with the EMC 89/336/EEC directive, under which the following harmonised standards apply :

- i) **EN55020** Electromagnetic Immunity
- ii) **EN61000-3-2** Mains Harmonic Disturbance Limits
- iii) **EN61000-3-3** Voltage Fluctuation Limits
- iv) **EN55013** Electromagnetic Compatibility

**Electrical Equipment Safety Regulations (1994)**

The MSX-1 has been designed and tested to demonstrate compliance the LVD 73/23/EEC directive, using the following standard.

- i) **EN60065** Safety requirements for mains operated electronic equipment for household and similar general use

Parameter	Mic	Phono	CD/Line
Sensitivity:	-52dBu (2mV)	-42dBu (5.5mV)	-8dBu (300mV)
Input Impedance:	2K	47K	50K
S/N Ratio:*	>65dB	>75dB	85dB
Freq. Responce:**	20Hz - 26KHz	RIAA	20Hz - 26KHz
THD:***	<0.05%		<0.005%

## Microphone Equalisation

Hi	=	± 12dB @ 80KHz
Lo	=	± 12dB @ 6KHz

## Microphone

Override Depth: -12dB (on music channels)

## Music Channel Equalisation

Hi	=	+12dB - 26dB (At frequencies above 10KHz)
Mid	=	+12dB @ 1KHz -26dB @ 1 KHz
Lo	=	+12dB - 26dB (At frequencies below 100Hz)

## Headphones

Load: 32 Ohms (Min.)

Power: 50mW (1.3V RMS) @ 32 Ohms

## Output Level (Unbalanced)

Low:	0dBu (0.775mV RMS)
High:	+6dBu (1.55V RMS)
Max. Output (without Clip):	+16dBu (4.88V RMS)

Note: \* :Measured at output 22Hz - 22KHz Filtered  
 \*\* :Measured at 3dB w.r.t. A 0dB ref. At Mixer Output  
 \*\*\* :Measured at mixer output, 30KHz Filtered

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## The MSX-1

The MSX-1 is a professional seven input DJ mixer. Six of the inputs are routed to two main input channels. These six inputs consist of 2 RIAA phono, 2 CD and 2 line.

Each of the two input channels offer extensive control over the mix by way of input select (transform), input gain, 3 band Eq (with rotary CUT), instant Kill switches and cue select.

The seventh input is a dedicated microphone input offering a 2 band Eq, input gain and override (talkover) facilities.

The crossfader operates between the two input channels controlling the signal to the output of the mixer. This means you can crossfade between channels 1 (on the left) 2 (on the right).

The crossfader is supported with the additional feature of the XF Reverse switch. This enables the operation of the crossfader to be instantly reversed.

Citronic's much copied Punch button facility enhances the crossfade facilities still further, by allowing you to Punch in the music channel faded out on the crossfader and mix it on the Live channels. This way you can create exciting mixes by laying one input on top of another for the time you hold down the Punch button. You can use this feature like a transformer switch as well by tapping the Punch button to create stutter effects.

The MSX-1 has a Cue (pf) facility that can be independently switched per channel on to the headphones and 10 segment LED bar graph display. This feature allows you to listen to the input that is not yet on the output of the mixer so you can set it up for beatmixing or cueing.

Another Citronic development, the Cue Pan, is also fitted which allows you to listen on your headphones or view on the bar graph display, either the cue channel or the output. Any setting in between lets you preview a mix of any input channel with the current mixer output.

To aid the DJ the MSX-1 is fitted with the 'SYNCRO' beat monitor. This provides a visual reproduction of the beat present on each audio input channel. When the beats of the two inputs have been matched the centre blue 'SYNCRO' LED will light indicating a mix is possible.

There is an output level control which affects the level of the master outputs. There are 2 master outputs which are unbalanced and are set at +6dB (1.55V) and 0dB (775mV).

All these comprehensive features are provided in a self contained unit complete with internal PSU.

## 28) CD Inputs

Input Impedance: Typically 10K Ohm  
Source Impedance: 2K Ohm (MAX)  
Nominal Sensitivity: 775mV RMS (0dBu)

## 29) Line Inputs

Input Impedance: Typically 10K Ohm  
Source Impedance: 2K Ohm (MAX)  
Nominal Sensitivity: 775mV RMS (0dBu)

## 30) Unbalanced Master Output (High)

Stereo program output is provided by standard unbalanced phono sockets.

Level: +6dBu (1.55V RMS)  
Output Impedance: <50 Ohm  
Load Impedance (MAX): 5K Ohm

## 31) Unbalanced Master Output (Low)

Output is provided by standard unbalanced phono sockets.

Level: 0dBu (775mV RMS)  
Output Impedance: <50 Ohm  
Load Impedance (MAX): 5K Ohm

## 32) AC Power Socket

A standard IEC socket is provided to connect the mixer, via the supplied lead, to the local AC power supply.

The power consumption of this mixer is 15VA

IEC to moulded 3 pin UK Plug: 230V  
IEC to moulded 2 pin Euro Plug: 220-230V  
IEC to moulded 2 pin Earthed U.S. Plug: 115V

If the AC supply is not via the moulded plug, the wiring of an IEC plug should be:

	USA	UK/Europe
Live:	BLACK	BROWN
Neutral:	WHITE	BLUE
Earth:	GREEN	YELLOW/GREEN

**WARNING: THIS MIXER MUST BE EARTHED FOR SAFETY AND GOOD GROUNDING PRACTICES IN MIXING**

In the event of ground-loop problems in the audio system, DO NOT disconnect the AC supply earth to any equipment before consulting equipment instruction manuals. For example most power amplifiers have audio ground lift switches, or are designed specifically to avoid ground-loop problems connected to 'earthed' mixers.

Ensure the mixer has a 'clean' AC supply from a wall socket that is not used for other equipment that would lead to interference - such as lights, refrigerators etc.

The IEC power socket has an integral fuse holder that takes a 20mm fuse. Always replace a blown fuse with the same type as specified on the rear of the mixer.

Note: **ALWAYS** disconnect the AC power cord before changing the fuse.

## 33) Earth Stud

Star point earth for auxillary equipment e.g. Turntables.



## 21) Microphone Input

A combination XLR & 1/4" jack socket is mounted on the front face of the mixer offering both balanced or unbalanced connection.

Balanced Input wiring:

Tip: Pin2: Positive (HOT)

Ring: Pin3: Negative (COLD)

Sleeve: Pin1: Ground (SHIELD)

Unbalanced Input wiring:

Tip: Pin2: Positive (HOT)

Ring: Pin3: Ground (SHIELD)

Sleeve: Pin1: Ground (SHIELD)

Input Impedance: 2K Ohm

Input Sensitivity: -52dBu (2mV RMS)

## 22) Mic EQ Control 'Hi'

This control allows cut and boost control over 'Hi' frequencies of the microphone input (see technical spec.)

## 23) Mic EQ Control 'Lo'

This control allows cut and boost control over 'Lo' frequencies of the microphone input (see technical spec.)

*Note: Excessive bass can lead to amplifier overload on the mixer output. If distortion is heard, reduce the Gain control to compensate.*

## 24) Microphone Gain

This control changes the level of the microphone. It will accommodate most microphones of both low and high impedance to 600 Ohms.

Range: <30dB to +52dB

## 25) Microphone Function Switch

This switch offers the facility to attenuate the main music program automatically when the microphone input is active.

OFF: This switches the microphone signal off.

ON: This attenuates the "live" music program by 12dB and places the microphone "on air" ready for use.

O'RIDE: When selected the "live" music program will be attenuated by 12dB when the microphone is used.

## 26) Cue/Output Display

A 10 segment LED ladder with PPM characteristics and peak hold facility on -9dB to +8dB relative.

Indication Range: -22 to +8dB

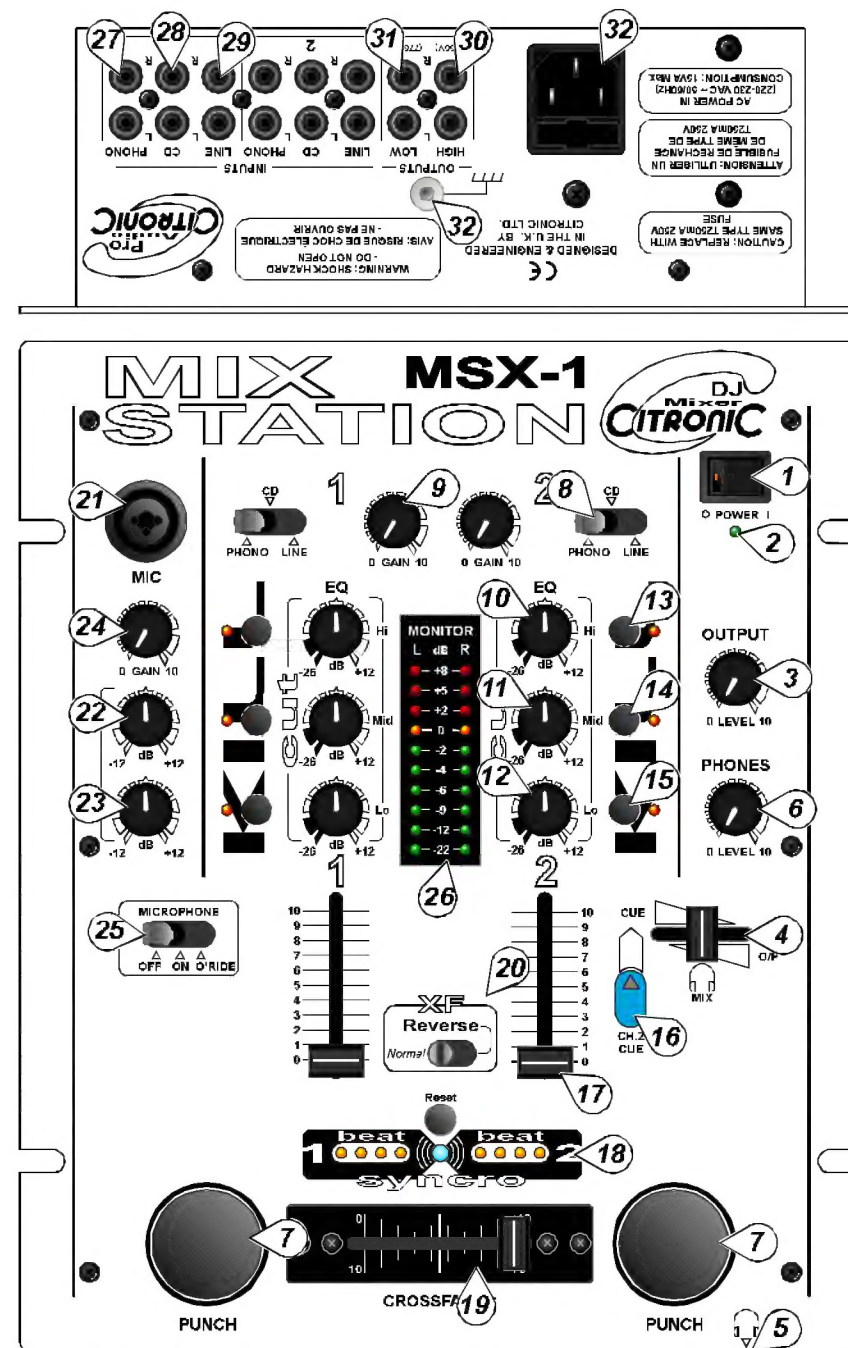
## 27) Phono Inputs

RIAA Equalised Stereo Phono Sockets

Input Impedance: 47K Ohm

Source Impedance: Typical Magnetic Cartridge

Input Sensitivity: 5.5mV RMS (-42dBu) max.



**1) Power Switch**

Controls the AC power to the mixer.

*Note: Be sure to switch on the power to your mixer before the amplification system.*

**2) Power Indicator**

This indicator illuminates when the AC Power is switched on.

**3) Output Level**

This controls the overall level leaving the mixer at the Master outputs.

**4) Headphone Mix**

Move to the left, it routes the cue signal to the headphones and Monitor display. To the right it sends the output signal to the headphones and monitor. Any position in between these extremes is a variable mix of the cued input signal and the mixer output.

**5) Headphone Socket (Standard 1/4" Jack)**

This is a stereo jack socket mounted on the front face of the mixer for you to attach your headphones.

L/H Channel:	Tip
R/H Channel:	Ring
Ground:	Sleeve
Minimum Load Impedence:	32 Ohms
Output Level:	50mV

**6) Headphone Level**

Sets the desired level to the headphones.

**7) Punch Button**

Create such effects as transforming and dub beat by transposing the program from one side of the crossfader directly onto the other side.

**8) Input Selector**

Each input channel has three stereo input options. This switch lets you select which of the inputs plugged into the mixer you wish to use. Both channels have 1 Phono (RIAA) input, 1 CD input and 1 Line input.

**9) Gain Control**

Each input channel has a gain control offering  $\sim 80$  to  $+10$ dB gain range to allow compensation for differing input levels.

The 3 band Eq not only offers an ample 12dB of boost, but each Eq band can be attenuated by at least 26dB. This provides the ability to CUT certain frequencies such as Bass and Treble.

**10) EQ Control 'Hi'**

This control allows cut and boost control over 'Hi' frequencies (see technical spec.)

**11) EQ Control 'Mid'**

This control allows cut and boost control over 'Mid' frequencies (see technical spec.)

**12) EQ Control 'Lo'**

This control allows cut and boost control over 'Lo' frequencies (see technical spec.)

**13) 'Hi' Kill Button**

This function instantly removes the high frequencies from the input signal, regardless of the Hi Eq control setting.

**14) 'Mid' Kill Button**

This function instantly removes the mid frequencies from the input signal, regardless of the Mid Eq control setting.

**15) 'Lo' Kill Button**

This function instantly removes the bass frequencies from the input signal, regardless of the Lo Eq control setting.

**16) Cue Selector**

This control selects the input signal on the respective channel and routes it to the cue channel on the headphones and monitor.

**17) Input Fader**

A High quality professional 45mm fader for controlling the mix level of the input to the main output.

**18) Syncro Beat Monitor**

This feature gives a visual aid to the prominent beat for channel 1 on the left and channel 2 on the right. The monitor lights 'bounce' from the outside in, to the beat of the music. After 4 beats the monitor repeats. If the beat from both channels is in time the blue LED in the centre will flash indicating a mix is possible. For best operation ensure both channels have the same level (use CUE signal to Bargraph Display).

The reset button will restart both monitors to the outside, allowing the user to observe and correct the beats of the 2 channels more easily.

Once the same beat has been achieved, the SYNCRO status can be achieved by pitch bending the cued channel until correct on both the Phones monitor and blue LED.

**19) Crossfader**

A fast action dipless crossfader between the input channels. The dipless action means that the signal only changes in level after the halfway point.

**20) Crossfade (XF) Reverse**

Selecting this switch reverses the operation of the crossfade.